Jenny Soonthornrangsan

Education:

University at Buffalo, Buffalo, NY
M.S. in Geology (Expected May 2021) Overall GPA: 3.95
Advisor: Professor Christopher Lowry
Focus: Hydrogeology

Master's Thesis: Analyzing future climate change and anthropogenic effects on water resources in Western New York

Hamilton College, Clinton, NY Class of 2019
B.A. in Geosciences, Minor in Mathematics Overall GPA: 3.77
Magma Cum Laude, Geosciences Honors, Dean's List

Undergraduate Thesis: Using heat as a tracer to determine the influence of pumping wells on stream discharge and salt contamination of groundwater in Waterville, New York.

Research Experience:

Graduate Student Researcher (August 2019 – Present)
Geology Department, University at Buffalo
Research Project: Analyzing future climate change and anthropogenic effects on water resources in Western New York

Modeling Software: PRMS, MODFLOW-NWT, GSFLOW

Undergraduate Student Researcher (May 2018 – June 2018)
Geosciences Department, Hamilton College
Research Project: Using heat as a tracer to determine the influence of pumping wells on stream discharge and salt contamination of groundwater in Waterville, New York

Field Work: Observed well drillers drilling and installing six monitoring wells. Collected groundwater and surface water samples and field parameters. Installed stakes with iButtons to record continuous temperature at different depths in a streambed.

Laboratory Work: Analyzed water samples and standards using ion chromatography. Created calibration curves to analyze results.

Computer Programming: Used the MATLAB script, VFLUX, to calculate vertical flux from temperature data.

Undergraduate Student Researcher (May 2017 – August 2017)
Environmental Engineering Solutions for Pollution Prevention Program (Research Experiences for Undergraduates), National Science Foundation
Research Project: Tracking nutrient fluxes in groundwater and surface water on the eastern shore of Lake Erie

Field Work: Measured stream discharge using a SonTek FlowTracker and collected stage and pressure data using pressure transducers. Collected water samples and field parameters from groundwater and surface water sources.

Laboratory Work: Measured alkalinity by performing titrations. Vacuum filtered and dried samples to measure total suspended solids (TDS).

Data Analysis: Created ratings curve to analyze stream discharge and stage data. Used Darcy's law to calculate nutrient fluxes.

Professional Experience:

Graduate Teaching Assistant (August 2019 – Present)
Geology Department, University at Buffalo

Teaching Experience: Taught and managed labs for undergraduate and graduate students

Grading Experience: Graded laboratory and homework assignments

Courses Taught: Hydrogeology (Undergraduates and Graduates), Natural Hazards and Climate Change (Undergraduates)

Undergraduate Student Intern (June 2018 – August 2018)
S. S. Papadopulos & Associates Inc.

Data Analysis: Presented data using ArcMap, Groundwater Desktop, Tableau, Excel, and Access, searched for background information, and read research papers for different projects.

Computer Programming: Wrote code in Visual Basic in Excel to calculate water quality indices for samples. Wrote scripts in R to plot log-log graphs to visualize data.

Other Work, Teaching, and Leadership Experience:

Student Manager (2015 – 2019)
Women's Basketball, Athletics Department, Hamilton College

Student Grader (2017 – 2018)
Geosciences Department, Hamilton College

Grading Experience: Graded assignments from introductory courses and Hydrogeology.

Student Co-Captain (2017)
Women's Club Basketball, Physical Education Department, Hamilton College

Student Intern (July 2016)
Thai – American Young Leadership Program, Thailand Sustainable Development Foundation, Royal Thai Consulate – General, Los Angeles

Teaching Experience: Taught English classes at a Thai, rural high school for three weeks.

Research Presentations:

Soonthornrangsan, J., Lowry, C.S., Evans, S.M., Aryal, Y., 2020. Quantifying Water Availability in a Climatically and Anthropogenically Changing Western New York. H041-06 presented at 2020 online Fall Meeting, AGU, 1-17 Dec. (Online talk)

Soonthornrangsan, J., Jickling, N. R., Rayne, T. W., 2018. Using heat as a tracer to determine the influence of pumping wells on stream discharge and salt contamination of groundwater in Waterville, New York. Geological Society of America *Abstracts with Programs.* Vol. 50, No. 6. (Poster)

Soonthornrangsan, J., Lowry, C. S., Allen-King, R. M., Glose, T. J., DaSilva, A., Dishman, R., Beck, M., 2017. Tracking nutrient fluxes in groundwater and surface water on the eastern shore of Lake Erie. Geological Society of America *Abstracts with Programs*. Vol. 49, No. 6. (Poster)

Soonthornrangsan, J., Lowry, C. S., Allen-King, R.M., Glose, T. J., DaSilva, A., Dishman, R., Beck, M., 2017. Monitoring groundwater and surface water nutrient fluxes on Lake Erie's eastern shore. Poster presented at the NY 6 Liberal Arts Consortium's annual undergraduate research conference, Saratoga Springs, NY. (Poster)

Other Presentations:

Senior Thesis presentation (May 2019)
Geosciences Department, Hamilton College

Summer Science Research Poster Session (October 2018)
Hamilton College

Brown Bag presentation (August 2018)
S. S. Papadopulos & Associates

GIS poster presentation (December 2017)
GIS Course, Geosciences Department, Hamilton College

Geo-lunch presentation (September 2017)
Geosciences Department, Hamilton College

REU research symposium (August 2017)
University at Buffalo

Professional Affiliations:

National Groundwater Association; Student Member
Geological Society of America; Northeast, Hydrogeology Division; Student Member
American Geophysical Union; Hydrology Section; Student Member

Honors and Awards:

2020 William B. & Dorothy Heroy Research Grant, Geological Society of America

2019	Arthur A. Schomburg Fellowship Program, University at Buffalo
2019	Elihu Root Fellowship, Hamilton College
2019	National Science Foundation Graduate Fellowship Honorable Mention
2018	Milton F. Fillius Jr. / Joseph Drown Prize Scholarship, Hamilton College (One of the most prestigious awards at Hamilton College)
2018	L. David Hawley Prize Scholarship in Geology, Geosciences Department, Hamilton College
2016, ‘17, ’18, ‘19	Dean’s List (Spring Quarter), Hamilton College
2015, ‘16	David Butcher Memorial Book Award, Hamilton College
2015, ‘16	Dean’s List (Fall Quarter), Hamilton College
2014	QuestBridge Prep Scholar, QuestBridge

Relevant Coursework:

University at Buffalo

Geology: Analysis of Geological Data, Elements of Geological Research, Contaminant Hydrogeology, Groundwater Modeling, Introduction to Computational Earth Sciences (Expected), Field Methods in Hydrogeology (Expected)

Engineering: Groundwater Engineering, Brownfield Restoration

Hamilton College

Mathematics: Multivariable Calculus, Linear Algebra, Differential Equations, Real Analysis, Differential Geometry, Statistics

Physics: Physics I (Calculus Based), Physics II (Calculus Based)

Computer Science: Introduction to Computer Science (Python), Data Structures (C++)

Chemistry: General Chemistry, Organic Chemistry I, Organic Chemistry II, Inorganic Chemistry

Geosciences: Environmental Geology, Hydrogeology, Structural Geology, GIS, Sedimentology and Stratigraphy, Paleontology, Mineralogy, MATLAB Earth and Environmental Studies

Miscellaneous: Environmental Ethics, Microeconomics, Macroeconomics

Language Skills:

Thai (conversational level speaking, reading, writing), English
Programming: Python, C++, Visual Basic, R, MATLAB